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(57) Abstract: Provided are a seed-specific expression promoter derived from sesame microsomal oleic acid desaturase (Si-FAD2) gene, an intron for expression enhancement, a seed-specific expression vector including the promoter and/or the intron, and a transgenic plant transformed with the seed-specific expression vector. Therefore, a useful product can be produced in a seed-specific manner or a common product in a seed can be functionally modified. Also, the promoter can be used together with the intron for expression enhancement, thereby increasing the expression level of an inserted gene in a seed. Therefore, it is very useful in development of a transgenic plant which induces large-scale expression of a foreign gene in a seed-specific manner.